

### 3. DEFINITION STAGE

3.1. Overview. The Definition stage expands the high-level requirements of the System Concept into specific, detailed functional and data requirements. These requirements provide the basis for a more concrete assessment of system benefits and costs; together with the high-level design contained in the System Concept, they form the basis for the detailed design of the system during the Design stage. The most significant activities of this stage include:

- o Developing detailed functional requirements.
- o Developing detailed data requirements.
- o Developing the Requirements Data Dictionary, which holds programmatic data.
- o Establishing formal procedures for configuration accounting and change control.
- o Beginning development of test plans.

Although the detailed functional and data requirements are defined within the context of the identified information management problem and approved System Concept, the analyses conducted during the Definition stage may surface new requirements or provide new insights into the overall information management problem. In such instances, the System Concept, and potentially the Initiation Decision Paper as well, are revised to reflect the results of the Definition stage. The detailed requirements defined during this stage, together with the System Concept, will serve as the basis for the activities of the Design stage.

Several points are of particular note for the Definition stage:

- o At the end of this stage a complete detailed description of the functions and capabilities of the system is available to guide the Design and subsequent phases of the life cycle. Some development methods call this description the proposed functional description or logical design.
- o The Definition Baseline is established at the end of this stage. It consists of the detailed functional and data requirements documents and the Requirements Data Dictionary.
- o If the requirements definition identifies a significant change to the nature or scope of the information management problem or the overall system design, the

Initiation Baseline (Initiation Decision Paper, System Concept, or both) is revised or replaced to reflect the new understanding.

**3.2. Detailed Description.** A detailed description of the Definition stage is presented in the following exhibits:

Exhibit 3-1	Definition Stage Summary
Exhibit 3-2	Definition Stage Objectives
Exhibit 3-3	Definition Stage Decisions
Exhibit 3-4	Definition Stage Activities
Exhibit 3-5	Definition Stage Roles and Responsibilities
Exhibit 3-6	Product: Configuration Accounting Records
Exhibit 3-7	Product: Detailed Functional Requirements
Exhibit 3-8	Product: Detailed Data Requirements
Exhibit 3-9	Product: Definition Decision Paper
Exhibit 3-10	Product: Requirements Data Dictionary
Exhibit 3-11	Product: Project Management Plan
Exhibit 3-12	Product: Data Management Plan
Exhibit 3-13	Product: System Test Document
Exhibit 3-14	Product: Acceptance Test Document

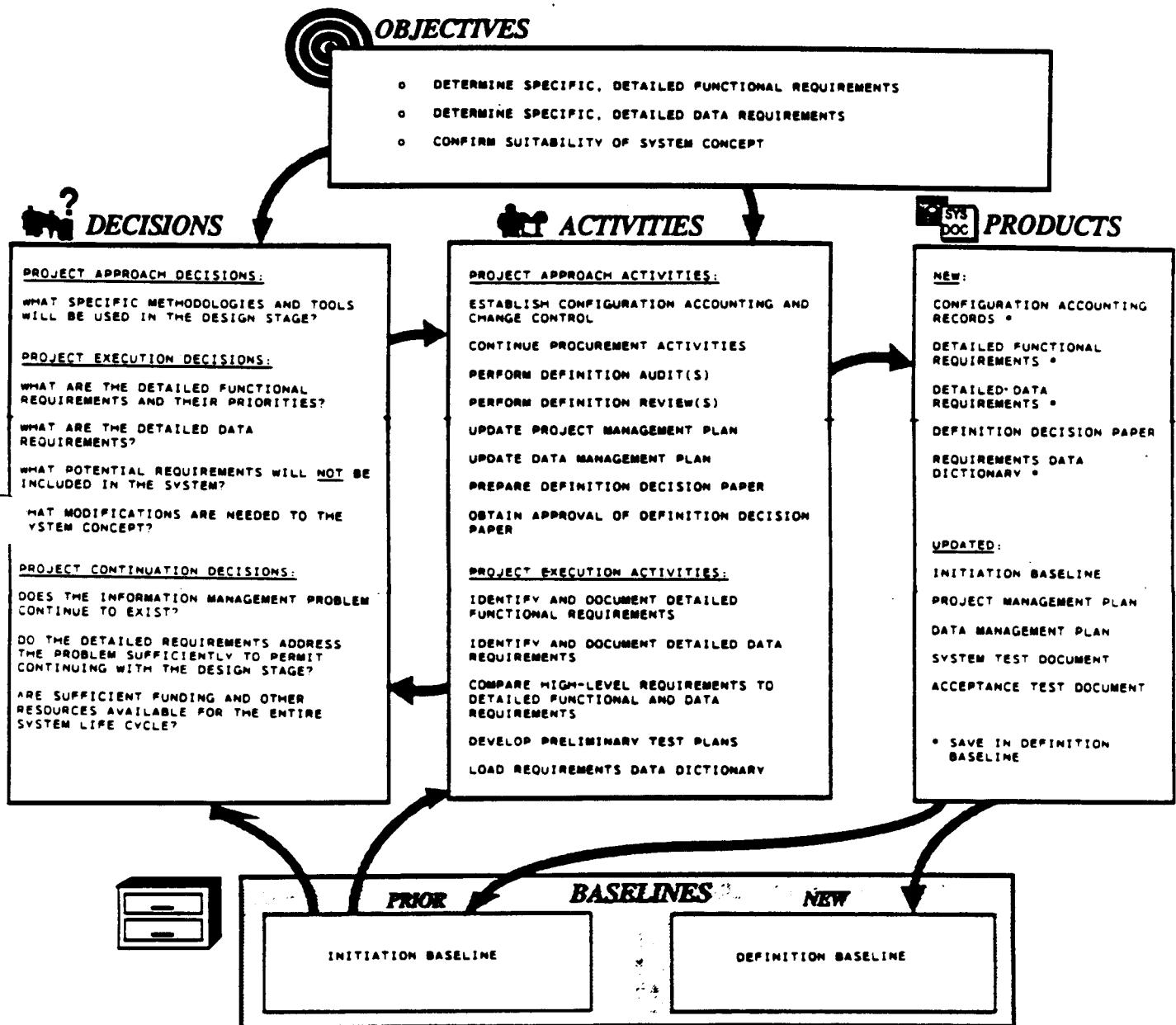
The following products may also be updated during the Definition stage:

<u>Product</u>	<u>Exhibit</u>
Initiation Baseline	
Initiation Decision Paper	1-6
System Concept	2-6

Outlines of all products are presented in Appendix B.

A number of activities of the Definition stage, such as project reviews and the update of the project management plan, relate to specific topics that are addressed throughout the life cycle. A life cycle wide perspective of these topics is presented in Chapter 10 of this Guidance.

## EXHIBIT 3-1: DEFINITION STAGE SUMMARY





## EXHIBIT 3-2: DEFINITION STAGE OBJECTIVES

### OBJECTIVE DESCRIPTION

Determine specific, detailed functional requirements

Expands the high-level functional requirements contained in the System Concept into a detailed statement of functional system requirements. These requirements encompass many aspects of the system: specific processing features, system performance, interfaces with existing or developmental systems, security, backup/contingency needs, implementation support, and operational and maintenance support, among others.

Determine specific, detailed data requirements

Expands the high-level data requirements contained in the System Concept into a detailed statement (logical model) of data requirements, including definitions of the individual data items and a description of the logical structure of the required data.

Confirm suitability of system concept

Ensures that the recommended solution embodied in the System Concept can meet the detailed requirements, or is modified as appropriate.



## EXHIBIT 3-3: DEFINITION STAGE DECISIONS

DECISION NAME	DECISION DESCRIPTION
<u>Project Approach Decisions:</u>	Determines the analytic and development methods and tools to be used in the Design stage. Includes consideration of computer-aided software engineering (CASE) tools and prototyping methods, and the linkage of methods and tools across all future life cycle phases and stages.
<u>Project Execution Decisions:</u>	Determines the functional capabilities that are to be provided by the system, distinguishing between those that are mandatory and those that are optional. Includes a consideration of trade-offs between any potentially mutually exclusive requirements. The requirements addressed in this decision will serve as the basis for subsequent reviews and evaluations of the system throughout its life cycle.
What are the detailed functional requirements and their priorities?	Determines the specific data to be included in the system, including both currently collected and newly collected data. Considers use of existing data element definitions, the logical structure of the data base(s), possible sources for all data, and the organizational impacts of collecting and entering data into the system. Considers alternative sources of data, where appropriate, and the need for clarification of program policy, guidance, or procedures to ensure clear definitions of the data.
What potential requirements will <u>not</u> be included in the system?	Identifies potential functional and data requirements that are too complex, time consuming, risky, and/or costly to fulfill within the scope of the currently defined system. Includes a consideration of program policy, organizational, and/or technical constraints. This decision might necessitate a scaling back or restructuring of the system concept.



## EXHIBIT 3-3: DEFINITION STAGE DECISIONS (Continued)

### Project Execution Decisions (Continued):

What modifications are needed to the system concept?

- Determines whether the system concept should be modified to meet unanticipated functional or data requirements, or fulfill previously identified requirements more effectively and/or at lower cost.
- Considers potential modifications to the system concept in view of newly identified program policy, organizational, or technical constraints, or any significant changes to the originally defined information management problem.

### Project Continuation Decisions:

Does the information management problem continue to exist?

- Confirms that the defined information management problem continues to exist, or that it has changed so significantly from the problem addressed by the system that a major redirection of the system may be needed.

Do the detailed requirements address the problem sufficiently to permit continuing with the Design stage?

- Confirms that the system adequately addresses the problem, and that appropriate approvals have been secured for the system to continue with the Design stage.

Are sufficient funding and other resources available for the entire system life cycle?

- Confirms that the funding, personnel, and other resources needed to support the operation of the system through the life cycle are available.



## EXHIBIT 3-4: DEFINITION STAGE ACTIVITIES

ACTIVITY NAME	ACTIVITY DESCRIPTION	PRODUCT CONTAINING RESULTS
<u>Project Approach Activities:</u>		
Establish configuration accounting and change control	Fully implement the Configuration Management Plan described in the Project Management Plan. Denote configuration items with respect to functional and data requirements. Establish records of suggested modifications to the system concept, and their dispositions.	Configuration Accounting Records
Continue procurement activities	Conduct tasks contained in the procurement approach related to the acquisition of hardware, software, communications support, and/or professional services. Identify needs and develop plans for any new acquisitions, including both new procurements and acquisitions using existing contracts or interagency agreements.	Project Management Plan
Perform definition audit(s)	Examine the Detailed Functional Requirements, Detailed Data Requirements, and Project Management Plan to confirm that all required content has been provided. Compare these documents with the configuration accounting records to ensure that all significant suggested modifications to the system concept are clearly documented. Revise these documents as needed. Multiple audits may be necessary if major rework of the Detailed Functional or Data Requirements takes place prior to final review and approval.	Detailed Functional Requirements Detailed Data Requirements Project Management Plan Configuration Accounting Records



## EXHIBIT 3-4: DEFINITION STAGE ACTIVITIES (Continued)

ACTIVITY NAME	ACTIVITY DESCRIPTION	PRODUCT CONTAINING RESULTS
Perform definition review(s)	<p><b>Project Approach Activities:</b></p> <p>Confirm that the information management problem continues to exist. Review the Detailed Functional Requirements and Detailed Data Requirements to ensure that the defined requirements address the problem adequately, at reasonable cost, in a responsive timeframe, and at acceptable risk. Note and confirm the recommendation of any significant deviations from the system concept, in view of potential improvements and/or adverse impacts such as degraded performance, increased risk, etc. Revise these documents as appropriate.</p>	Detailed Functional Requirements Detailed Data Requirements Initiation Decision Paper System Concept
Update Project Management Plan	Expand the workplan to provide details for the design stage. Refine the benefit-cost analysis to reflect the benefits and costs of the detailed requirements, and any modifications to the system concept. Refine the implementation approach prepared during the Concept phase, as needed. Specify interim design reviews, and update threshold analysis of reviews and approvals. Select methodologies and tools to be used in the Design stage.	Project Management Plan
Update Data Management Plan	Refine Data Management Plan as needed to address issues raised during detailed requirements definition.	Data Management Plan



## EXHIBIT 3-4: DEFINITION STAGE ACTIVITIES (Continued)

ACTIVITY NAME	ACTIVITY DESCRIPTION	PRODUCT CONTAINING RESULTS
<u>Project Approach Activities (Continued):</u>		
Prepare Definition Decision Paper	Summarize the results of all other project approach and execution activities conducted in the Definition stage. Include results of threshold analysis to confirm levels of review and approach.	Definition Decision Paper
Obtain approval of Definition Decision Paper	Obtain management approval to continue with the Design stage, and confirm the continued commitment and availability of resources for the remainder of the system life cycle.	Definition Decision Paper



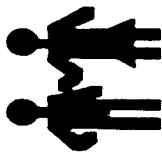
## EXHIBIT 3-4: DEFINITION STAGE ACTIVITIES (Continued)

ACTIVITY NAME	ACTIVITY DESCRIPTION	PRODUCT CONTAINING RESULTS
<b>Project Execution Activities (Continued):</b>		
Identify and document detailed functional requirements	<p>Describe in detail the functional capabilities to be provided by the new system. Include references to capabilities provided by existing system(s), where appropriate. Functional capabilities to be addressed include flows of information through the system, user interface needs, performance parameters for the processing performed by the system, interfaces to other existing or developmental systems, security, backup/contingency needs, implementation support, user support, and operational and maintenance support. Identify testing requirements, priorities of individual capabilities, potentially conflicting requirements/capabilities, and assumptions, risks, and open issues, if any. Note any findings which are in conflict with, or appear to be outside the scope of, the high-level requirements contained in the system concept.</p>	Detailed Functional Requirements
Identify and document detailed data requirements	<p>Identify and document the detailed data needed to solve the information management problem. Prepare definitions of the data elements and any new data entities needed to meet the information need. Prepare and document a logical data model that describes the relationships between different data entities by showing the logical structure of the data required for each function. Identify the data quality objectives, security, archival, retention, and audit trail requirements for all data.</p>	Detailed Data Requirements



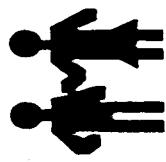
## EXHIBIT 3-4: DEFINITION STAGE ACTIVITIES (Continued)

ACTIVITY NAME	ACTIVITY DESCRIPTION (Continued):	PRODUCT CONTAINING RESULTS
Compare high-level requirements to detailed functional and data requirements	Compare detailed functional and data requirements to corresponding components of the system concept and identify potential conflicts and/or requirements that appear to expand the scope of the concept. For each conflict or expansion, note the potential modification in the concept needed to fully address the requirement.	Detailed Functional Requirements Detailed Data Requirements System Concept
Develop preliminary test plans	Reexamine and confirm overall strategy for conducting system testing and acceptance testing, with focus on overall timeframes for testing (including staggering of system and/or acceptance tests for different system modules or subsystems); parallel testing of related new systems, if applicable; the organizations and types of staff that should participate in acceptance testing; and any logistics issues in terms of hardware, travel, and/or potential schedule conflicts. Define test scenarios to be used during testing to confirm that the system meets the defined requirements.	System Test Document Acceptance Test Document
Load Requirements Data Dictionary	Describe basic characteristics of each data element and entity to be used by the system: name, definition, purpose/use, steward, definer, and source.	Requirements Data Dictionary



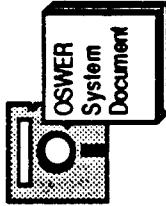
## EXHIBIT 3-5: DEFINITION STAGE ROLES AND RESPONSIBILITIES

ROLES AND RESPONSIBILITIES					
<u>ACTIVITIES</u>	<u>OWNER PROGRAM MANAGEMENT</u>	<u>OWNER PROGRAM STAFF</u>	<u>PROJECT MANAGEMENT</u>	<u>PROJECT STAFF</u>	<u>QUALITY ASSURANCE</u>
					<u>PROCUREMENT</u>
ESTABLISH CONFIGURATION ACCOUNTING AND CHANGE CONTROL			LEAD	PERFORM	REVIEW
CONTINUE PROCUREMENT ACTIVITIES			LEAD	PERFORM	SUPPORT
PERFORM DEFINITION AUDIT(S)	SUPPORT	LEAD	PERFORM	SUPPORT	
PERFORM DEFINITION REVIEW(S)	PERFORM	LEAD	SUPPORT	PERFORM	
UPDATE PROJECT MANAGEMENT PLAN	SUPPORT	LEAD/PERFORM	SUPPORT	REVIEW	
UPDATE DATA MANAGEMENT PLAN	SUPPORT	LEAD/PERFORM	SUPPORT	REVIEW	
PREPARE DEFINITION DECISION PAPER	SUPPORT	LEAD/PERFORM	SUPPORT	REVIEW	
OBTAIN APPROVAL OF DEFINITION DECISION PAPER	APPROVE	SUPPORT	LEAD/PERFORM	SUPPORT	
IDENTIFY AND DOCUMENT DETAILED FUNCTIONAL REQUIREMENTS	SUPPORT	LEAD	PERFORM	REVIEW	



## EXHIBIT 3-5: DEFINITION STAGE ROLES AND RESPONSIBILITIES (Continued)

ROLES AND RESPONSIBILITIES (Continued)					
ACTIVITIES	OWNER PROGRAM MANAGEMENT	OSWER PROGRAM STAFF	PROJECT MANAGEMENT	PROJECT STAFF	QUALITY ASSURANCE
	SUPPORT	LEAD	PERFORM	PERFORM	REVIEW
IDENTIFY AND DOCUMENT DETAILED DATA REQUIREMENTS					
COMPARE HIGH-LEVEL REQUIREMENTS TO FUNCTIONAL AND DATA REQUIREMENTS	SUPPORT	LEAD	PERFORM	PERFORM	REVIEW
DEVELOP PRELIMINARY TEST PLANS	SUPPORT	LEAD	PERFORM	PERFORM	REVIEW
LOAD REQUIREMENTS DATA DICTIONARY					



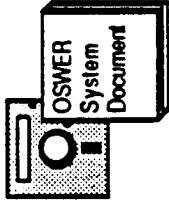
## EXHIBIT 3-6: CONFIGURATION ACCOUNTING RECORDS

### SUMMARY DESCRIPTION

The Configuration Accounting Records document modifications to any baselined products of the system life cycle. Procedures and formats for configuration accounting are documented in the Configuration Management Plan contained in the Project Management Plan.

### TOPICS

- o Logs of requested modifications and their disposition (Contains the following information for each requested modification to an approved and baselined product)
  - Request date
  - Organization/requestor
  - Change control number or other identifier
  - Affected products
  - Status/disposition
- o Logs of modifications to life cycle products (for each product) (Contains the following information for each approved modification)
  - Change control number or other
  - Identifier
  - Approval date
  - Identification of portion(s) of product affected by modification
  - Implementation date



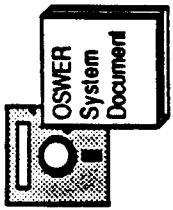
## EXHIBIT 3-7: DETAILED FUNCTIONAL REQUIREMENTS

### SUMMARY DESCRIPTION

Provides a technology-independent, detailed description of the programmatic and other activities to be supported by the system. The Detailed Functional Requirements document expands on the high-level functional requirements identified during the Concept phase, addressing requirements that are within the scope of the system as defined in the Initiation Decision Paper and in the System Concept. Potential requirements identified during Definition which are determined to be outside the scope of the system, and which will not be addressed by the system, are also noted. To facilitate configuration management, the functional requirements should be summarized in a table that identifies a configuration item for each requirement or set of related requirements.

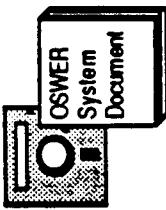
### TOPICS

- o Introduction
  - Objectives
  - Reference to related documents
- o Description of current systems/data
  - Missions supported
  - Functional and data summary
  - Responsibilities (organizations and individuals)
  - Equipment used
  - Inputs and Outputs
  - Processing capabilities
  - Control, backup, security
  - Cost
  - Deficiencies and limitations
- o Functional description of proposed system (description of each major functional area)
  - Information flows
  - Inputs, outputs: source/destination, format (e.g., reports, screen displays), content, purpose, use, volume, frequency
  - Interfaces to other systems (note processes, data, hardware, communications)
  - Data characteristics, architecture (reference Detailed Data Requirements)
  - Automated processes, processing logic
  - Manual procedures
  - Security



## EXHIBIT 3-7: DETAILED FUNCTIONAL REQUIREMENTS (Continued)

- o System performance and environment
  - Parallel operation)
    - Facilities required
  - Data storage (volume)
  - Response time/turnaround
  - User interface
  - Software flexibility
  - Backup and failure contingencies
- o Design and development considerations
  - Anticipated system life span
  - Organizational impacts (e.g., workflow, staffing levels, required user support, system support)
  - Physical location of users
  - Capabilities potentially to be provided by existing system(s), including conversion/consolidation of existing systems
  - Transition from existing to new system (e.g., training, operation support,
- o Differences from System Concept
  - Summary of newly identified requirements
  - Summary of modifications needed to concept
- o Issues (e.g., uncertainties of program direction, needed changes in program policy or operation, potential technical limitation, dependencies with regard to other systems within and external to OSWER)
  - Potential functional requirements excluded from this system (potential requirements, and identification of current or future alternate systems or projects, if any, to accommodate them)



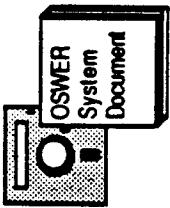
## EXHIBIT 3-8: DETAILED DATA REQUIREMENTS

### SUMMARY DESCRIPTION

Provides a technology-independent, detailed description of the data required to solve the information management problem. The Detailed Data Requirements document expands on the high-level data requirements identified during the Concept phase. It describes the data to be maintained by the system, as well as the logical structure and relationships of the data. Potential data requirements identified during Definition which are determined to be outside the scope of the system, and which will not be addressed by the system, are also noted. To facilitate configuration management, the data requirements should be summarized in a table that identifies a configuration item for each requirement or set of related requirements.

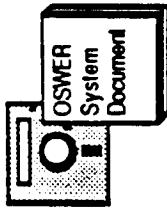
### TOPICS

- o Introduction
  - Scope of the requirements effort
  - The information need
- o Logical data model
  - Data elements required to describe each data entity
  - Relationships among data elements
- o Description of current system data (if any)
  - Frequency by process
  - Inputs/outputs by process
  - Process performance requirements
- o Missions supported
  - Data elements
  - Data structures
    - Schema



## EXHIBIT 3-8: DETAILED DATA REQUIREMENTS (Continued)

- o Entity analysis: expanded conceptual data model, including new data entities
  - Each entity and its data elements \*
  - Impact on the conceptual data model
  - Data steward organization \*
- o Normalized entities
  - o Data standards
- o Data value validation by data element, where needed \*
  - o Data element definitions \*
  - Included in Requirements Data
- o Security requirements
  - o Standard data elements
    - Names
    - Where used
- \* Items that may be copied from the Requirements Data Dictionary



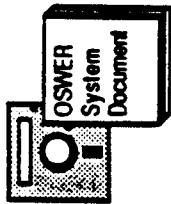
## EXHIBIT 3-9: DEFINITION DECISION PAPER

### SUMMARY DESCRIPTION

The Definition Decision Paper serves as a decision document, for presentation to OSWER program management in support of the detailed functional and data requirements characterizing the information management problem. It provides a summary of the key analyses of the Definition stage, emphasizing those aspects of the identified requirements that are important to program management, including significant revisions to the system concept. It requests two major actions: confirmation of support and resources for the remainder of the life cycle, and approval to continue with the Design stage.

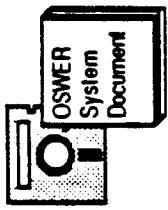
### TOPICS

- o Introduction
  - Major functional requirements
  - Major data requirements
  - Significant variation from high-level requirements identified in system concept
  - Significant functional and data requirements to be excluded from this system
- o Purpose of this Definition Decision Paper
  - Results of Definition Review (note any incomplete reviews)
- o References to related documents
  - Summary of findings
  - Recommendations
- o Confirmation of Initiation Decision Paper
  - New perspectives regarding nature and/or scope of information management problem (if any)
  - Updated results of threshold analysis for reviews and approvals
  - Significant changes to benefit-cost analysis
- o Summary of functional and data requirements



## EXHIBIT 3-9: DEFINITION DECISION PAPER (Continued)

- o Issues
  - Actions on prior issues
  - New or outstanding issues
- o Summary of Project Management Plan and next steps
  - o Summary of decisions needed
    - Request confirmation of associated resources/funding
    - Request approval to continue with Design stage



## EXHIBIT 3-10: REQUIREMENTS DATA DICTIONARY

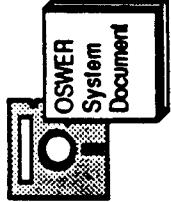
### SUMMARY DESCRIPTION

The Requirements Data Dictionary serves as a repository of metadata (data about data) about data entities and data elements identified during Definition. This dictionary will be expanded in future stages to include additional information about the data resources processed by the system. This product can be stored electronically in a data dictionary system.

### TOPICS

For each data entity and data element:

- o Name
- o Programmatic definition
- o Purpose/Use
- o Data steward
- o Data definer
- o Source
- o Dependencies with other entities and/or elements
- o Acceptable values
- o Applicable standard



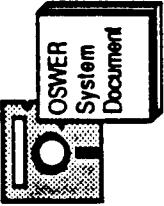
# EXHIBIT 3-11: PROJECT MANAGEMENT PLAN

## SUMMARY DESCRIPTION

The Project Management Plan is updated and refined throughout the Definition stage to reflect the project team's evolving management approach. At the end of this stage, the Project Management Plan covers a broad range of topics, as evidenced in the topical outline below. Some topics (e.g., security approach, maintenance approach) are summarized in the Project Management Plan, and presented in greater detail in other life cycle products. Underlined items are added to the Project Management Plan for the first time during this phase; other material was initially developed during the Initiation or Concept phase, and is refined as appropriate during Definition.

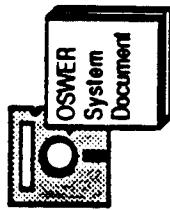
## TOPICS

- o Project charter/objectives
  - Project identification (incorporate
  - Initiation Decision Paper by reference)
  - Mission and objectives
  - Scope of information management
  - Problem/project
- o Life cycle adjustment
  - Consolidation of phases and stages, if any
  - Partitioning of project/system into major work packages, modules, etc. with different timing through the life cycle
- o Project team organization
  - Project management structure
    - Manager assigned: individual, current organization, authority
    - Boards, committees, or other project management participants
  - Project team organization
    - Structure and roles
    - Participating organizations
    - Staffing plan (including internal staff and use of contractors)



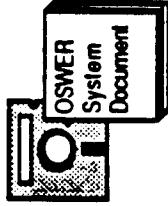
## EXHIBIT 3-II: PROJECT MANAGEMENT PLAN (Continued)

- o Project budget (broken out by stage)
  - EPA staff
  - Contractor services
  - Equipment acquisition
  - Hardware maintenance
  - Site preparation
  - Packaged software acquisition
  - Supplies
  - Timeshare
  - Other
  - Cost-accounting methodology
- o Project reviews/quality assurance
  - Applicable project review level
  - Reviews to be conducted (by stage)
  - Organization/individuals for each review
  - Review schedule
- o Applicable project approvals
  - Project approval level
  - Specific approvals to be obtained (by stage)
  - Approval organization and individuals
  - Approval schedule
- o Benefit-cost analysis (summary, transferred from other life cycle products)
  - Methodology and assumptions
  - Benefits
    - Programmatic
    - Annual monetary
    - System life
  - Costs
    - Nonrecurring
    - Recurring
    - Annual
    - System life
    - Payback period
  - Sensitivity analysis
- o Methodologies and tools
  - Methodologies (non-automated)
    - For Concept phase
    - For Definition stage
    - For Design stage
    - Impact on other stages
  - Automated tools/software packages
    - For Concept phase
    - For Definition stage
    - For Design stage
    - Impact on other stages
    - Support required (if any) for use of tools



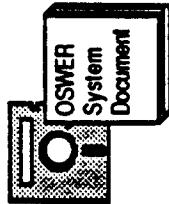
## EXHIBIT 3-11: PROJECT MANAGEMENT PLAN (Continued)

- o Workplan
  - Concept phase
  - Definition stage
  - Design stage
    - Activities and related tasks
    - Products
    - Schedule by task and product
    - Staff and contractor assignments
    - Level of resources for each task and/or product
    - Task relationships/dependencies
    - Schedule of reviews and approval
    - Performance/progress reporting
    - Notification
- o Procurement approach
  - Resources to be acquired through existing contracts
    - OSWER contracts
    - Other agency contracts
  - Resources to be acquired through new procurements
    - OSWER vehicles
    - Other Agency vehicles
    - Schedule for each procurement
    - Workplan for each OSWER procurement
    - Procurement assistance individuals for each procurement
- o Configuration Management Plan
  - Configuration manager (organization and individual
    - Change Control Panel
  - Participants (organizations and individuals)
    - Modification request/approval process
    - Procedures/methods for configuration identification and accounting, software control, audits
    - Configuration management documentation: identification and location of existing CM logs, and official existing baseline contents
  - Documentation standards: standards to be used for each life cycle product
  - o Security approach
    - Summary of security requirements (reference other life cycle products)
      - Security organization (if applicable)
      - Hardware and facilities measures
      - Software and communications measures
      - Data base security
      - Procedural measures
      - Backup and recovery
  - Overview
    - Data identification
    - Current data location
    - Organizations to accomplish conversion
  - Manual data to be converted
  - Automated data to be converted



## EXHIBIT 3-11: PROJECT MANAGEMENT PLAN (Continued)

- o Installation approach: schedule for installing each separately-installed system module
  - o Maintenance approach
    - Maintenance support organization
  - o Operation approach
    - Organization of operation support activities
- o User support approach
  - Training activities
    - Materials to be prepared
    - Ongoing user support (hotline, etc.)

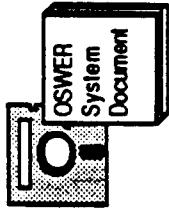


## EXHIBIT 3-12: DATA MANAGEMENT PLAN

### SUMMARY DESCRIPTION

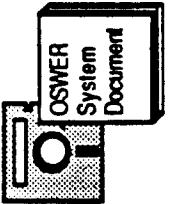
The Data Management Plan reflects the project's data management approach. As the project progresses through the life cycle, additional information is added to this plan, and existing information is modified to reflect the current approach. Some topics (e.g., entity definitions, logical data model) are summarized in the Data Management Plan, and presented in greater detail in other life cycle products. Underlined items are added to the Data Management Plan for the first time during this stage; other material was initially developed during the Concept phase, and is refined as appropriate during Definition.

TOPICS	
o Information need	-- Conceptual data model -- Likely sources of data -- Information flow/data model validation
-- Document the information need	-- Data distribution plan
-- Missions supported	-- Information collection burden
-- Scope of the need	
o Data steward organizations	o <u>Definition stage</u>
-- Lead organization responsibilities	-- <u>Interview Plans</u>
-- Other organizations' roles	-- <u>Data analysis by process</u>
-- Data definers for the project	-- Entity normalization
o Concept phase	-- <u>Conceptual data model revision</u>
-- Entity list	-- High-level data requirements revision
-- Entity definitions	-- Logical data model
-- Entity identifiers	-- Requirements Data Dictionary
	-- <u>Data flow/logical model validation</u>



## EXHIBIT 3-12: DATA MANAGEMENT PLAN (Continued)

- o Data documentation responsibilities
  - Development & Installation phase
  - Data management software
  - Operation phase
- o Maintaining existing data documentation
- o Data quality assurance plan
  - Responsible organization
  - Milestones and staffing
  - Data quality objective monitoring plan
- o Data security requirements and strategy
  - Sensitive data
- o Data life cycle methodologies and tools
  - Metadata management approach
- o Data conversion strategy
  - Plan for physical flow of data
  - Data testing strategy
- o Testing support
  - Kinds of test data bases required
  - Test data provision
  - Performance validation plan
  - Responsible organization
  - Projected testing support needed



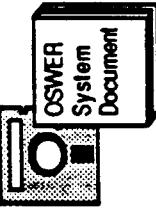
## EXHIBIT 3-13: SYSTEM TEST DOCUMENT

### SUMMARY DESCRIPTION

The System Test Document is updated and refined during the Definition stage by the addition of testing criteria and a preliminary system testing plan. Underlined items are added to the System Test Document for the first time during this stage; other material was initially developed during the Concept phase, and is refined as appropriate during Definition.

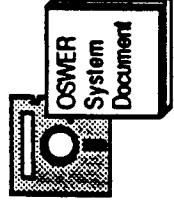
### TOPICS

- o Introduction
  - Purpose of this document
  - References to related documents
- o Testing strategy
  - Methodologies
  - Participants
  - Relationship to testing of other systems (if applicable)
- o Test criteria: criteria reflect functional and data requirements, and may incorporate specific sections (or configuration items) of the Detailed Functional and Data Requirements by reference.
  - Internal testing: While each system component is being developed, project staff will continually check that it is internally consistent and conforms to specifications.
  - Unit testing: as each system component is completed, project staff will test it to ensure that it operates correctly.
  - Integration testing: after all system components are completed, project staff will assemble them in the development environment and test them to verify that the system operates correctly in its entirety and satisfies the functional and data requirements.
- o Test plan: description of testing to be performed by project staff. Usually includes internal, unit, integration, and



## EXHIBIT 3-13: SYSTEM TEST DOCUMENT (Continued)

- System testing: when the completed system has been approved for implementation, project staff will install it in a simulation of the production environment and test it to verify that it operates correctly in its entirety and satisfies the functional and data requirements.



## EXHIBIT 3-14: ACCEPTANCE TEST DOCUMENT

### SUMMARY DESCRIPTION

The Acceptance Test Document is updated and refined during the Definition stage by the addition of the acceptance testing plan in the form of test requirements/- scenarios. Underlined items are added to the Acceptance Test Document for the first time during this stage; other material was initially developed during the Concept phase, and is refined as appropriate during Definition.

### TOPICS

- o Introduction
  - Purpose of this document
  - References to related documents
- o Testing strategy
- o Test requirements/scenarios: description of representative events or cases that should serve as the basis for testing the system against the Detailed Functional and Data Requirements.
- o Participating organizations
  - Relationship to testing of other